

Virginia Department of Game and Inland Fisheries

Final Report

Migratory Bird Habitat Enhancement

at

GATR Tract, Mockhorn Island Wildlife Management Area
Northampton County, Virginia

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Executive Summary

This project enhances migratory bird habitat on the state-owned GATR tract of the Mockhorn Island Wildlife Management Area (WMA), located at the southern tip of the Eastern Shore of Virginia. The tract was previously used as a federal military facility, and vegetation on the property has been largely unmanaged since the change of ownership. The 356-acre tract was predominated by an overstocked pine forest with minimal understory. The few open areas were mostly vegetated with honeysuckle and/or fescue grass. A derelict cinder block building and asphalt parking area, remnants from the property's previous use, occupied a location desired for wildlife habitat.

Through this project, the Virginia Department of Game and Inland Fisheries, and its subcontractors, improved the habitat at the WMA by restoring 141 acres of desirable habitat using a number of proven management techniques. Selected areas of the pine forest were harvested, including creating six forest openings (approximately ¼- to ½-acre in size each), which reduced tree density substantially to allow sunlight to stimulate under- and mid-story plant growth. Fruit-producing shrubs, important food for migrating birds and other species, were planted in the openings to create better forest-field transition zones. Existing mid-story woody vegetation and logging debris was mulched. Walking paths were created during logging, providing opportunities for wildlife viewing and serving as firebreaks for use when prescribed fire is applied on the WMA. The use of fire as a management tool will be important in maintaining a valuable herbaceous understory on the property. Larger invasive honeysuckle and privet patches were mechanically cleared. These patches and other more spotty occurrences of invasive plant species (including *Sericea lespedeza* and fescue) were treated with herbicide to remove these undesirable species and promote native plant growth. The vacant concrete building and asphalt parking lot, located in an area desirable for native habitat restoration, were demolished and removed. The resulting one-acre field was remediated and planted as a forest clearing.

The restored areas continue to be monitored for herbivory, particularly by white-tailed deer, and chemical deterrents will be spot-applied as needed. Additional habitat restoration work will occur outside of this grant, particularly in the openings, including planting of hardwood seedlings and a seeding mix of native grasses, forbs, and flowering plants.

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Introduction

The Virginia Department of Game and Inland Fisheries (VDGIF) is the Commonwealth's wildlife agency. The mission of the VDGIF is:

- To manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth;
- To provide opportunity for all to enjoy wildlife, inland fish, boating and related outdoor recreation and to work diligently to safeguard the rights of the people to hunt, fish and harvest game as provided for in the Constitution of Virginia;
- To promote safety for persons and property in connection with boating, hunting and fishing;
- To provide educational outreach programs and materials that foster an awareness of and appreciation for Virginia's fish and wildlife resources, their habitats, and hunting, fishing, and boating opportunities.

The VDGIF owns 39 wildlife management areas (WMAs) located around the state and totaling more than 203,000 acres. Fifteen of these areas occur in Virginia's defined Coastal Zone Management region. In 2011, the VDGIF completed a multi-year assessment of its WMAs, the outcomes of which are guiding management actions on these properties. As a result, the VDGIF and Board of Game and Inland Fisheries have adopted three goals to under which relevant and appropriate management actions and strategies are structured:

- Manage to maintain, create, or enhance a variety of high quality habitats, suited to the site, that support healthy and diverse populations of game and nongame wildlife at optimum levels;
- Establish and manage populations of game and nongame wildlife compatible with maintaining habitat integrity, providing recreational opportunity, and serving the needs of the citizens of Virginia; and
- Provide opportunities for wildlife-based recreation (hunting, fishing, trapping, wildlife viewing) and boating consistent with maintaining and enhancing wildlife habitat and populations.

Additionally, the VDGIF participates as a member of the Southern Tip Ecological Partnership (STEP). For almost 20 years, the STEP, comprised of the Virginia Coastal Zone Management Program (VCZMP), the Virginia Department of Conservation and Recreation, the VDGIF, and U.S. Fish and Wildlife Service, and The Nature Conservancy, have been working to acquire, enhance and protect land on the southern tip of Virginia's Eastern Shore. Research has documented the southern tip as a hemispherically important stopover habitat for Neotropical migratory songbirds. As millions of birds flying south in the fall are funneled into the tip of the Shore's long peninsula, they must find food and cover to refuel and rest. The protection and management/enhancement of this habitat provides these important resources to support these migratory efforts each year.

Annually, the VDGIF makes investments of staff time and equipment to maintain and improve wildlife habitats on its WMAs. However, not every WMA is managed as intensively as others,

due to staffing and funding limitations. One of these properties is the 356-acre GATR tract of the Mockhorn Island WMA, located on the seaside of Northampton County at the southern end of Magothy Bay. The tract, an area of mixed upland and marsh habitats, was previously used as a federal military facility, and vegetation on the property has been largely unmanaged since the change of ownership. It has been predominated by an overstocked pine forest with minimal understory. The few open areas were mostly vegetated with honeysuckle and/or fescue grass. A derelict cinder block building and asphalt parking area, remnants from the property's previous use, occupied a location desired for wildlife habitat. Restoration of habitats on this area for Neotropical migrants was timely and an important contribution to the VCZMP and STEP initiatives to protect and improve food and cover resources in this area of the southern tip.

Habitat Restoration Actions

Timber Harvest (Thinning and Creation of Clearings)

A contractor timber operator performed timber stand improvements in two major areas of the GATR tract. In total, nearly 140 acres of pines were thinned or removed. Six forest openings of ¼-acre to ½-acre in size were created during the harvest process. The current basal area has been substantially reduced to a residual measurement of approximately 125 square feet/acre, which will enhance considerably the establishment of a good understory that will provide more food and shelter for wildlife.



Pine forest pre-thinning.



Pine forest post-thinning



Example of forest clearing

Removal of Debris, Creation of Firebreaks/Walking Trails

A forestry mulcher was contracted to clear logging debris at the loading deck of the timber harvest and to remove some logging slash and advanced-stage dense understory shrubs and trees in the harvested areas. The contractor also installed firebreaks that will facilitate the long-term maintenance of an herbaceous understory by prescribed fire. The firebreaks will also serve as walking paths for area visitors, improving wildlife-related recreational opportunities at the area, especially wildlife viewing.



Roadside mulching to reduce dense and undesirable vegetation.



Firebreak/walking trail development post-logging.

Demolition of Block Building and Asphalt Parking Lot

The VDGIF coordinated with the Commonwealth's Department of General Services to secure appropriate approvals and permits needed for the demolition of the concrete block building left over from prior occupancy and use of the area. A review of the structure reviewed that asbestos and lead occurred there (in shingles, tiles, paint, etc.), requiring appropriate abatement during demolition. A contractor demolished the building and associated asphalt parking area (handling hazardous materials as required), creating a one-acre opening. The site has been remediated and planted as a forest opening.



Existing block building, constructed by previous landowner.



Removal of block building.

Removal of Invasive Species

The VDGIF contracted with a forestry mulcher to remove several large thickets of Japanese honeysuckle, privet, and other invasive species at the entrance to the tract. A certified herbicide applicator spot-treated a number of smaller patches throughout the restored area to remove *Sericea lespedeza*, fescue, privet, honeysuckle and other invasive plant species.



Privet thicket sprayed with herbicide.

Plantings

At the conclusion of the project, 900 shrubs for the newly-created openings and areas previously occupied with non-desirable (invasive) vegetation were planted. The following mixture of native species was selected in that they provide excellent food and cover for migrating birds as well as for other wildlife:

- *Viburnum dentatum* (Arrow Wood)
- *Morella cerifera* (Southern Waxmyrtle)
- *Ilex glabra* (Inkberry)
- *Ilex verticillata* (Winterberry)
- *Aronia melanocarpa* (Black Chokeberry)
- *Aronia arbutifolia* (Red Chokeberry)



These shrubs were planted along the wooded edges of the openings to enhance the forest-to-field ecotone and in the openings themselves. The restored areas continue to be monitored for herbivory, particularly by white-tailed deer, and chemical deterrents will be spot-applied as needed.

The original project scope included planting of an appropriate seeding mix of native grasses, forbs and flowering plants in forest openings and of a limited number of hardwoods in several of the smaller newly created gaps in the forest canopy. The delays in the demolition of the block house (due to compliance review and permit issuance) and delays in completing forestry activities (due to weather) precluded the completion of these activities. However, the VDGIF will perform these activities during the late fall/early winter of 2014/2015, using its own funds, to bring the restoration project to full completion.

Future Actions

In the short-term, the VDGIF will complete the initial restoration vision with the application of a seeding mix of native grasses, forbs and flowering plants to provide seeds and supporting invertebrates for food. The timing of this planting will occur when dormant winter seeding is appropriate. Additionally, the VDGIF will procure hardwood seedlings and plant these during the winter 2014/2015. Staffs will continue to monitor for herbivory, particularly by white-tailed deer, and chemical deterrents will be spot-applied as needed.

In the long-term, the VDGIF will maintain forest openings and evaluate further acreage for timber stand improvement. Understory and herbaceous vegetation will be managed through a combination of prescribed fire, mechanical manipulation and herbicide treatments to control invasive species as necessary. Management will be focused on maintaining cover and food sources for neo-tropical migrants as well as a habitat mosaic suitable for species such as American woodcock that require a variety of habitat types from open singing areas to mature forest and young brushy edges. The habitat work at the GATR tract will benefit a variety of breeding songbirds as well including a number of Species of Greatest Conservation Need (SGCN) as identified in Virginia's Wildlife Action Plan. Brown-headed nuthatches (SGCN Tier IV) are expected to respond favorably to a more open pine forest. Yellow-breasted chat and brown thrasher (SGCN Tier IV) will thrive along the woody/brushy edges in the created openings.

The VDGIF staff will monitor the vegetative response to management practices to ensure the desired effect is being reached. Surveys for target species (neo-tropical migrants and breeding birds as well as American woodcock) will be implemented and this information used to tailor future management practices.

Project Acknowledgement Signage

Signage acknowledging project funding sources, reviewed by the Virginia Coastal Zone Management Program, has been installed at the gateway kiosk to the property.

